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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,577	10/31/2003	Tapesh Yadav	037768-0159	1118
22428 7590 04/17/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
LE, HOA T				
ART UNIT		PAPER NUMBER		
1794				
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04/17/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/698,577

Applicant(s)

YADAV ET AL.

Examiner

H. T. Le

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-53 is/are pending in the application.
- 4a) Of the above claim(s) 36, 37 and 41-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-35, 38-40 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 36, 37 and 41-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected election. The election was made **without** traverse.

Specification

3. The disclosure is objected to because of the following informalities:

3.1 The provisional application No. 60/111,442 (paragraph [0001]) and 60/069,936 (paragraph [0002]) are queried. 60/111,442 is directed to a diet supplement based on garlic extract while 60/069,936 is entitled "Autofog nozzle". None of them has anything to do with the present claimed subject matter, and there is no common inventor between these provisional applications and the present application. Correction or explanation is required.

3.2. The information of the copending applications cited under the "Related Applications" section needs to be updated. The specification fails to indicate that the copending application 10/449,278 has matured to a US Patent No. 6,830,822; 10/150,722 to USP 6,602,595; and 09/790,036 to a US patent No. 6,933,331.

Claim Rejections - 35 USC § 112

4. **Claims 16-35, 38-40 and 53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The

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claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification describes a secondary element (namely anion X) in the metal compound as "carbon, nitrogen, oxygen, boron, phosphorus, sulfur, chalcogens, and halogens" (instant specification, paragraph [0097]. Chalcogens include O, S, Se, and Te, and halogens include F, Cl, Br and I, which leaves elements H, In, Sb, Al, Ni, Si and Ge unaccounted for. The claims therefore describe elements that are not disclosed in the specification. One skilled in the art would not know how to practice the claimed method by incorporating non-disclosed elements H, In, Sb, Al, Ni, Si and Ge.

5. Claims 16-35, 38-40 and 53 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for secondary element in the metal compound being carbon, nitrogen, oxygen, boron, phosphorus, sulfur, chalcogens, and halogens, does not reasonably provide enablement for elements of H, In, Sb, Al, Ni, Si and Ge.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or the invention commensurate in scope with these claims. The specification describes a secondary element (namely anion X) in the metal compound as "carbon, nitrogen, oxygen, boron, phosphorus, sulfur, chalcogens, and halogens" (instant specification, paragraph [0097]. Chalcogens include O, S, Se, and Te, and halogens include F, Cl, Br and I, which leaves elements H, In, Sb, Al, Ni, Si and Ge unaccounted for. The claims therefore describe elements

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that are not disclosed in the specification. One skilled in the art would not know how to practice the claimed method by incorporating non-disclosed elements H, In, Sb, Al, Ni, Si and Ge. Therefore, the claims are broader than the enabling disclosure.

6. **Claims 16-30, 32-35 and 38-40 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a combustion process of an emulsion to obtain nanoscale particles, does not reasonably provide enablement for any method other than combusting an emulsion comprising a dopant and a metal compound.**

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Applicant argued that the combustion is described "as a 'particularly preferred' method; therefore, claims should not be limited to combustion. However, there are no other methods that are capable of forming a "compositionally uniform" nanopowder in which a dopant is present. The requirement for the nanopowder to be "compositionally uniform" is that the "diffusion kinetics" has to be "sufficiently fast" (instant specification paragraph [0105], page 31). However, the specification offers no non-combusting methods where sufficiently fast diffusion kinetics can occur. Therefore, one skilled in the art would not know how to produce compositionally uniform doped nanopowder without combusting an emulsion comprising the dopant and the metal compound.

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7. Claims 16-35, 38-40 and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is incomplete because some step(s) appears to be missing. It is not understood how a mixture of metal compound and dopant can form a "compositionally uniform" nanopowder by just heating (i.e. "high temperature processing). In addition, "high" in "high temperature" renders the claim indefinite because the term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In claim 20 it is unclear where the heating step fits in the process recited in claim 16 upon which it depends.

In claim 22, it is unclear where the plasma process fits in the process recited in claim 16 upon which it depends.

Claim 23 suffers the same deficiency of claim 22 which regards to the "quench step".

Claim 26 suffers the same deficiencies of claim 16.

Claims 30-33 suffer the same deficiency discussed in claims 20-23.

Claim 53 suffers the same deficiency of claim 31.

Other claims are deemed indefinite in view of their dependency upon claim 16 or 26.

Examiner's Note Regarding the Effective Filing Date

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8. The idea of making doped nanoparticles was first introduced in U.S. Patent 6,344,271 (col. 13, lines 57-66) which was filed on March 23, 1999. The Patent 6,344,271 is not entitled to the filing date of the provisional application because 60/107,318 because the provisional application does not disclose the method as claimed, but rather it only discloses method of making nanoparticles by sintering submicron or micron particles. The examiner is aware that U.S. Patent 6,228,904 touches upon the method of making nanoparticles described in the Bickmore patent (US 5,984,997); however, the method mentioned there is not method of making doped nanopowders but rather multi-element nanoparticles. Therefore, the present application is entitled only to the filing date of the Patent 6,344,271 (Application No. 09/274,517), which is March 23, 1999.

9. "A claim in a continuation-in-part application recites a feature which was not disclosed or adequately supported by a proper disclosure under 35 U.S.C. 112 in the parent nonprovisional application, but which was first introduced or adequately supported in the continuation-in-part application, such a claim is entitled only to the filing date of the continuation-in-part application." In re Chu, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995); Transco Products, Inc. v. Performance Contracting Inc., 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994); In re Van Lagenhoven, 458 F.2d 132, 136, 173 USPQ 426, 429 (CCPA 1972); and Chromalloy American Corp. v. Alloy Surfaces Co., Inc., 339 F. Supp. 859, 874, 173 USPQ 295, 306 (D. Del. 1972). See MPEP 1701. Here, the concept of making doped nanomaterials was first introduced in Application No. 09/274,517) now US Patent 6,344,271 which was filed on March 23, 1999.

Therefore, claims of the present application are entitled only to the filing date of the Application No. 09/274,517, which is March 23, 1999.

Claim Rejections - 35 USC § 102

10. Claims 16-35, 38-40 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Bickmore et al (US 5,984,997).

Bickmore teaches a method of making doped nanoparticles by combusting a solution or suspension containing a dopant and a metal compound wherein the metal compound containing a metal element and an anion X selected from C, N, O, B, P, S, chalcogens (Se, Te) and halogens (F, Br, Cl, I). The resulting nanopowder is compositionally uniform. See col. 3, lines 50-67 and col. 5, lines 27-50. See col. 2, lines 42-65 and examples 3, 5 and 6 for particular metal elements.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. Thi Le/

H. (Holly) T. Le
Primary Examiner
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April 14, 2008